



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,707	01/26/2004	Raymond Wellman	021331-000710US	9283
20350 7590 04/28/2011 KILPATRICK TOWNSEND & STOCKTON LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER VAN SELL, NATHAN	
			ART UNIT 1783	PAPER NUMBER
			NOTIFICATION DATE 04/28/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docket@kilpatricktownsend.com  
ipefiling@kilpatricktownsend.com  
jlhice@kilpatrick.foundationip.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/765,707	<b>Applicant(s)</b> WELLMAN ET AL.	
	<b>Examiner</b> NATHAN VAN SELL	<b>Art Unit</b> 1783	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15,28,31,33,34,36-54,57-61 and 63-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15,28,31,33,34,36-54,57-61 and 63-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

Amendments to the claims, filed on February 28, 2011 have been entered in the above-identified application.

Any rejections made in the previous action, and not repeated below, are hereby withdrawn.

### ***Claim Objections***

Claim 65 objected to because of the following informalities: “code-shaped” appears to be misspelled or otherwise in error. See Line 2. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 69 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term “aperture” in claim 69 is used by the claim to mean “a hole that is capable of extending inward” which suggests the hole has sidewalls that intrude, while

Art Unit: 1783

the accepted meaning is “a hole.” The term is indefinite because the specification does not clearly redefine the term.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Claim 31 is rejected under 35 U.S.C. 112, fourth paragraph, as failing to specify a further limitation of the subject matter claimed.

### ***Claim Rejections - 35 USC § 103***

**The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

Claims 15, 28, 31, 33, 34, 36-39, 41--54, and 57-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Vliet (U.S. Patent No. 4,099,749) in view of Wellman et al. (U.S. Patent Pub. No. 2002/001733 A1), Jacobson et al. (U.S. Patent 6,213,522), Thomas (U.S. Patent No. 4,669,177) and Williams et al (U.S. Patent No. 5,961,154).

Regarding Applicant's claims 15, 36, 60 and 61, van Vliet discloses a duct assembly (*figure 1 and col. 1, lines 5-16*) comprising a slip collar (*ref. #2, figure 1*) comprising (i) a tubular outer wall portion, (ii) a tubular inner wall portion, (iii) an intermediate portion disposed between the tubular outer wall portion and the tubular inner wall portion, (iv) a first slot region defined by the tubular outer wall portion and the tubular inner wall portion, and (v) a second slot region defined by the tubular outer wall portion and the tubular inner wall portion (*ref. #2, figure 1*). The first and second slot

Art Unit: 1783

regions face away from each other and the slip collar is an integral, one-piece structure (*ref. #2, figure 1*). The assembly further comprising a first duct including a first end inserted into the first slot region and a second duct including a second end inserted into the second slot region (*ref. #1, figure 1*). The first end inserted into the first slot region and the second end inserted into the second slot region each have a constant diameter (*figure 1*).

van Vliet fails to disclose that each of the tubular outer wall portion, the tubular inner wall portion, and the intermediate portion in the slip collar comprises a fiber reinforced plastic material or that the first and second ducts also comprise a fiber reinforced plastic material.

Wellman et al. teaches that fiberglass reinforced plastics are used in the formation of air channel systems (*page 1, para. 5*). One of ordinary skill in the art would have recognized that duct joints and ducts themselves are made completely from fiberglass reinforced plastics because it is well known that fiber reinforced ducts are lighter than metal ducts and are a preferred material for air duct systems, as taught by Wellman et al. Wellman et al. further teaches the duct outer wall has a total of about 0.074 inch to about 0.638 inch. (*page 4, para. 39*). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. See MPEP § 2144.05. Wellman et al. discloses varying the thickness of the outer wall based on the needed structural strength for the application. (*page 4, para. 39*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select a fiberglass reinforced plastic material for the coupling sleeve and ducts of van Vliet in order to provide a fire resistant duct assembly that is lighter in weight, as taught by Wellman et al. Furthermore, it would have been obvious to one having ordinary skill in the art at the time of invention to vary the outer wall thickness in the duct based upon the needed structural strength for the application, as taught by Wellman et al.

van Vliet further fails to disclose that the tubular wall outer portion includes a curved section including apertures, and wherein screws are disposed in the apertures.

Jacobson et al. teach that slip collars comprise teeth-like projections to provide mechanical securement for an inserted duct work (*col. 3, lines 19-21*) and additional apertures on a curved section and wherein screws are disposed in the apertures to provide additional strength once the duct work is assembled (*col. 2, lines 30-34 and col. 3, lines 22-23*). The apertures are positioned in pairs comprising a first aperture and second aperture fore each pairs (*col. 2, lines 30-34*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to add apertures with screws to the curved section to the device of van Vliet in order to provide additional strength once the duct work was assembled, as taught by Jacobson.

The combination of van Vliet and Jacobson et al. fail to disclose the screws are set screws.

Art Unit: 1783

Thomas teaches a coupling sleeve for pipes (*title and abstract*) which uses set screws and/or adhesive to attach the sleeve to the pipe to prevent lateral movement (*abstract, col. 4, lines 1-3, col. 4, lines 40-46*). It is well established in the art that set screws provide securing means where the head of the screw is not exposed at the surface, thereby providing a smooth surface absent of protrusions.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select set screws and adhesive for the coupling sleeve of van Vliet, as taught by Thomas, in order to avoid having protrusions snag near by objections.

van Vliet fails to teach that the assembly further comprising an adhesive between the slip collar and the duct, and around the set screws and in the slot region and fails to teach the thickness of the outer wall portion of the coupling sleeve.

Williams et al teach that slip collars are formed with screws and/or adhesive compositions applied in the slot regions comprised of novalac or epoxy resin (*col. 4, lines 2-4*) of the slip collar to provide additional connection strength between the ducts and the coupling device (*ref. #94, Figure 7 and ref.# 38, Figure 1*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to adhesive composition such as novalac or epoxy resin to the slot regions and around the set screws of the coupling device of van Vliet in order to add additional connection strength between the ducts and coupling device, as taught by Williams et al.

Art Unit: 1783

Regarding claims 28, 33, 34, 37, 41 and 44, van Vliet fails to teach that the outer wall portion and inner wall portion comprise different polymeric materials. However, Wellman et al. teaches that major problems are faced when using fiberglass reinforced plastic materials and not any metal in duct systems including fire resistance and chemical resistance (*page 1, para. 4*). Wellman et al. goes on to teach that in order to overcome these issues the ducts are formed having an inner wall portion and outer wall portion in the same manner as the van Vliet duct joint assembly (*page 1, para. 5*). Wellman et al. teaches that the matrix used to form the outer wall portion is a phenol resorcinol type fire retardant resin and the inner tubular wall portion is formed of a vinyl ester (*page 1, para. 5*). One of ordinary skill in the art also would have recognized that the ducts as well as the joints require a fire resistant outer portion and chemical resistant inner portion in order to function adequately as a duct assembly, as taught by Wellman et al. .

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select a fiberglass reinforced phenol resorcinol material for the outer tubular portion of van Vliet in order to provide a fire resistant outer portion that is lighter in weight, as taught by Wellman et al. , and to use vinyl ester as the resin in the fiberglass reinforced material in the inner portion of the duct joint of van Vliet, in order to provide chemical resistance, as taught by Wellman et al. . Thus, the slip collar of van Vliet and Wellman et al. combined is free of metal.

Regarding claim 31, Wellman et al. teaches the duct outer wall has a total of about 0.074 inch to about 0.638 inch. (*page 4, para. 39*). In the case where the claimed



Art Unit: 1783

ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. See MPEP § 2144.05.

Regarding claim 38, van Vliet teaches that the coupling sleeve can be used as an end cap in which it would be obvious that the sleeve would contain only one slot region (*col. 2, lines 39-40*).

Regarding claim 39, van Vliet teaches the tubular inner wall portion is shorter than the tubular outer wall portion (*ref.# 3, Figure 4*).

Regarding claim 45, Wellman et al. discloses using chopped fibers (i.e., chopped strands) in the inner wall (*page 1, para. 8*).

Regarding claim 46, van Vliet teaches the slip collar is formed first and after the slip collar is formed the first end of the duct is inserted into the first slot region and the second end of the second duct is inserted into the second slot region (*col. 1, lines 19-33*).

Regarding claim 47, van Vliet teaches the slip collar is formed first and after the slip collar is formed the first end of the duct is inserted into the first slot region and the second end of the second duct is inserted into the second slot region (*col. 1, lines 19-33*).

Regarding claims 48-51, the claims are written as product by process claims and only the structure taught by the product is given patentable weight. When an article made by a different process is found to be substantially the same, the burden is shifted to the applicant to show an unobvious difference. To show an unobvious difference

Art Unit: 1783

applicant must provide evidence such as unexpected results provided by forming the article with the different process.

Regarding claim 52, van Vliet teaches the interior surface of the tubular outer wall portion and the surface of the tubular inner wall surface facing the slot region are smooth (*Figure 1*).

Regarding claim 53, Wellman et al. teaches that the fibers are carbon (*Abstract*).

Regarding claim 54, van Vliet teaches the slip collar is curved (*Figure 4*).

Regarding claim 59, van Vliet fails to disclose the claimed thickness of the inner wall portion. However, where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges in thickness involves only routine skill in the art. MPEP 2144.05.

Regarding claims 42, 43, 57 and 58, Williams et al teach that slip collars are formed with screws and/or adhesive compositions applied in the slot regions comprised of novalac or epoxy resin (*col. 4, lines 2-4*) of the slip collar to provide additional connection strength between the ducts and the coupling device (*ref. #94, Figure 7 and ref.# 38, Figure 1*).

Regarding claims 63-66, Jacobson et al., discloses using cone shaped screws (*ref. #7*) with cone-shaped tips and a tightening end that would penetrate (i.e., contact) through the apertures (*ref. #5*) (*FIG. 1*). It appears either the screws (*ref. #7*) would be driven from one side and penetrate both ends of the first and second duct in the slot regions (*ref. #3*), or screws (*ref. #7*) would be driven through holes (*ref. #5*) on the top

Art Unit: 1783

side of the collar to penetrate the ends of the first duct and bottom side of the collar to penetrate the ends of the second duct in the slot regions (ref. #3) (*FIG. 1*).

The combination of van Vliet and Jacobson et al. fail to disclose the screws are set screws.

Thomas teaches a coupling sleeve for pipes (*title and abstract*) which uses set screws and/or adhesive to attach the sleeve to the pipe to prevent lateral movement (*abstract, col. 4, lines 1-3, col. 4, lines 40-46*). It is well established in the art that set screws provide securing means where the head of the screw is not exposed at the surface, thereby providing a smooth surface absent of protrusions. Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select set screws and adhesive for the coupling sleeve of van Vliet and Jacobson et al., as taught by Thomas, in order to avoid having protrusions snag near by objections.

Regarding claim 67, Wellman et al. teaches the inner tubular wall portion is formed of a vinyl ester (*page 1, para. 5*). van Vliet fails to disclose the claimed thickness of the inner wall portion. However, where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges in thickness involves only routine skill in the art. MPEP 2144.05.

Regarding Claim 69, Jacobson et al., discloses using screws (*ref. #7*) that would penetrate (i.e., contact) through the apertures (*ref. #5*) (*FIG. 1*). It appears based on the screw (*ref. #7*) direction that the apertures on the top side must extend inward toward the center of the tubular outer portion (*FIG. 1*).

Art Unit: 1783

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Vliet (U.S. Patent No. 4,099,749) in view of Wellman et al. (U.S. Patent Pub. No. 2002/001733 A1), Jacobson et al. (U.S. Patent 6,213,522) and Thomas (U.S. Patent No. 4,669,177) as applied to claim 36 above, and further in view of Nishio (U.S. Patent No. 6,045,164).

van Vliet, Wellman et al., Jacobson et al. and Thomas teach all that is claimed in claim 36 as presented above, but fail to teach that the tubular inner wall portion comprises a fluoropolymer material. However, Nishio teaches that fluoropolymers such as polytetrafluoroethylene are superior in resistance to chemicals and heat (*col. 4, lines 43-53*). One of ordinary skill in the art would have recognized that fluoropolymers that are superior in resistance to chemicals and heat would be beneficial in use in forming the chemical resistant portion of a fume duct joint. One of ordinary skill in the art would have also recognized that van Vliet, Wellman et al., and Nishio are analogous insofar as both references are concerned with joints between tubular articles made of resins that require chemical resistance.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to form the tubular inner wall portion of van Vliet so that it includes a fluoropolymer material since Nishio teaches that fluoropolymers are well known in the art of tube joints and connectors to be chemical and heat resistant.

Regarding claim 68, Wellman et al. teaches the duct inner wall resin (i.e., film) has a total of about 0.02 inch to about 0.03 inch. (*page 4, pa*). In the case where the

Art Unit: 1783

claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. See MPEP § 2144.05.

### ***Response to Arguments***

Applicant's arguments, see page 8 and 9, filed, February 28, 2011 with respect to the rejection(s) of claim(s) 61 under U.S.C. § 112 have been fully considered but they are not persuasive. Claim 61 contain(s) the limitation “wherein the apertures are only in the curved section.” The specification does not disclose that the apertures are excluded from other sections, therefore this limitation is considered new matter. The new matter must be deleted.

Applicant's arguments in the response filed on February 28, 2011 with respect to claims 15 and 36 have been carefully considered but are moot since the original rejections are withdrawn and in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 40, 45, 31, 32, 42, 43, 57 and 58 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN VAN SELL whose telephone number is

Art Unit: 1783

(571)270-5152. The examiner can normally be reached on Monday through Friday, 9am til 6:30pm, EST, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alicia Chevalier/

Supervisory Patent Examiner, Art Unit 1788

/N. V./

Examiner, Art Unit 1783